

On the discovery of *Semipallium coruscans coruscans* (Hinds, 1845) (Bivalvia: Pectinidae) in the Adriatic Sea ¹

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ABSTRACT. The report of *Semipallium coruscans coruscans* (Hinds, 1845) from the Adriatic Sea is the subject of discussion. Some juvenile pectinid species collected in association with *Corallium rubrum* (Linné, 1758) were studied and one of the authors (J. P.) noticed that juvenile specimens of *Manupecten pesfelis* (Linné, 1758) show great similarity with *S. coruscans coruscans* (Hinds, 1845) reported from the Adriatic Sea. Subsequently we decided to make a broader study of these two species and at the end of our study we can confirm that the report of *Semipallium coruscans coruscans* from the Adriatic Sea is a misidentification of *Manupecten pesfelis*. We noticed that *Semipallium coruscans coruscans* was transferred to the genus *Paschaniites* Dijkstra & Raines, 1999.

INTRODUCTION

The work of Šiletić (2004) about the discovery of a single specimen of *Semipallium coruscans coruscans* (Hinds, 1845) from Mljet Island, Croatia came to the knowledge of the first author and he noticed that this specimen is very similar to some specimens from his collection already identified as juvenile specimens of *Manupecten pesfelis* (Linné, 1758). To confirm his supposition we tried to find some other specimens and met with success. In some shell grit collected by fishermen on red coral, off Mljet Island at depths from 60 to 90 m, we found many pectinid specimens, some of which were *M. pesfelis* at different stages of growth.

Moreover, Šiletić confirmed her first report in a second work (Šiletić, 2006) where she specified that the specimen was collected at depth of 80 m, on a colony of *Cellaria fistulosa* (Linné, 1758) a Bryozoa less calcified than red coral.

After examination of the specimens from Mljet Island we compared them with some specimens of *S. coruscans coruscans* from Raiatea Island, French Polynesia, and so far as possible we compared shells of a similar size.

SYSTEMATICS

Family **PECTINIDAE** Wilkes, 1810
Subfamily **CHLAMYDINAE** von Teppner, 1922
Genus *Manupecten* Monterosato, 1889
Manupecten pesfelis (Linné, 1758)
Genus *Semipallium* Jousseaume in Lamy, 1928
Semipallium coruscans coruscans (Hinds, 1845)

Distribution of the two species. The distribution of *Manupecten pesfelis* was reported by Linné (1758) from “*O. Africano*” (incorrect locality) as stated by Dijkstra (1999) who gives a new restricted locality: “*Mediterranean Sea*”. It was also reported by Wagner (1991) as: “The species is confined to the Mediterranean and the adjacent area of the Atlantic Ocean from Portugal to the Azores and south to Cape Verde” and about habitat he wrote: “On gravelly or coralline bottoms from 10 to 250 m”. Some years after Dijkstra & Goud (2002) reported: “Mediterranean Sea and adjacent region of eastern Atlantic from Portugal southwards to the Cape Verde Islands. Living littorally to bathyal depths among coral rubble or gravel on sandy bottoms. Present material dead in 0-540 m”. Recently Raines & Poppe

¹ After this article had been reviewed by referees and accepted by the editor, the authors became aware of a similar work published by Trono & Resta (2007). Notwithstanding, they decided to publish their paper because it contains useful illustrations and important information about the distribution and the description of both species.

Trono, D. & Piccioli Resta, G. 2006 (2007). Sull'errata segnalazione di *Semipallium coruscans coruscans* (Hinds, 1845) (Bivalvia: Pectinidae) in Mediterraneo. *Bolletino Malacologico* 42(9-12): 101-105.

(2006) report it as: "From Mediterranean Sea and the adjacent Atlantic Ocean; from Portugal to Cape Verde including the Azores and Canary Islands" and about habitat they report: "Littoral to sublittoral zone, under rocks on gravelly sandy bottoms with coral rubble".

We report that *M. pesfelis* on the Dalmatian coast is rather common in the infralittoral zone, and in coral bottoms. In shell grit coming from red coral bottoms, 40-100 m deep, live specimens are of small or medium size while big specimens are rare and usually dead.

It lives, attached with a byssus, in fissures in the rocks and in poorly lit caves because it is adverse to light, so it is difficult to find live specimens because they live deep in the fissures.

It also likes the old walls built to protect the small harbours and many big and beautiful specimens were collected in these places at a depth of 1-2 m.

The first author never found this species under stones where, on the contrary, *Mimachlamys varia varia* (Linné, 1758) and *Talochlamys multistriata* (Poli, 1795) are very common.

CLEMAM (2007) gives a different genus to these species but we prefer to use the names proposed by Dijkstra & Goud (2002) and Dijkstra & Gofas (2004) because we noticed that CLEMAM is not updated with the names used in these two works.

The type locality of *Semipallium coruscans coruscans* is: Anna Maria Port, Nukuhiva, Marquesas Islands and it lives byssally attached in areas with clear water and it prefers areas through which strong streams run on the external side of the reefs or the passage to the internal lagoon, at a depth of about few dm up to about 20 m (Dijkstra, 1983). The report of Raines & Poppe (2006) is short: "Indo-Pacific region, to include the eastern and southern coast of Africa". The habitat is stated as: "littoral zone, byssally attached to rocks or coral on sandy bottom", no depth is given.

The species is not reported for the Red Sea by Oliver (1992) and Orlin & Dekker (2000) as already stated by Šiletić (2004) so it cannot be considered a lessepsian migrant.

Material examined. *Manupecten pesfelis* from Mljet Island (Croatia) 60-90 m deep: 1 specimen of 2.5 mm, 1 specimen of 3.6 mm, 1 specimen of 6.7 mm and 1 specimen of 13.0 mm all from Giunchi-Tisselli collection ex Jakov Prkić collection (Figs 1-7).

Semipallium coruscans coruscans from Raiatea Island (French Polynesia): 1 specimen of 5.5 mm, 1 specimen of 9.0 mm and 1 specimen of 10.7 mm all from Giunchi-Tisselli collection (Figs 8-13).

Description of our material. *Manupecten pesfelis*. The sculpture of adult specimens consists of 7 or 8 primary radial ribs and numerous secondary radial riblets on and between primary ribs. The entire surface of the shell is covered with a layer consisting of very fine honeycomb-like microsculpture, giving the shell a shagreen look. This layer is relatively soft and it can be easily removed or damaged. When removed or

eroded a fine reticulating pattern of lamellae covers the whole valve (Figs 31, 34). Left valve has primary ribs more pronounced, more rounded and the intercostals spaces are larger than the ribs. In the right valve these ribs are flattened and larger than intercostals spaces. The number of secondary riblets is varied on and between primary ribs. Ribs of anterior auricles are also different and in the left valve these ribs are nodulous while in the right valve they are lamellose. On the dorsal margin of posterior auricles there are 5-6 strong tubercles (Fig. 33).

The sculpture of juvenile specimens is quite different from that of adult ones.

In our smallest specimen of 2.5 mm (Figs 1-2) both valves are sculptured with thin radial striae and a shagreen microsculpture is not yet formed, only microscopic lamellae and grooves are visible.

In our specimen of 3.6 mm (Fig. 3), which is almost identical to that figured in the work of Šiletić (2004), already is present a shagreen microsculpture and some secondary riblets are formed.

In our specimen of 6.7 mm (Figs 4-5) both valves are sculptured with primary and secondary riblets, irregularly arranged, and a shagreen microsculpture covers the entire surface of the valves except in the umbonal area. In this growth stage tubercles on the dorsal margin of auricles are not yet formed.

In our specimen of 13.0 mm (Figs 6-7) there is already a sculpture similar to that in adult specimens. Primary radial costae are well formed and secondary radial riblets are on and between the primary ribs. On the anterior auricle of the left valve the ribs become nodulous and on the edge of posterior auricle there is a strong tubercle. In this specimen too the entire surface of both valves is covered with a shagreen microsculpture.

Semipallium coruscans coruscans. The sculpture of our specimens (Figs 8-13) consist of 14 or 15 primary radial ribs, regularly arranged, and numerous secondary riblets mostly on primary ribs and very few between them. The layer with shagreen microsculpture is eroded in all our specimens and a fine reticulating pattern of lamellae covers the valves. Only on left valve of our specimen of 5.5 mm is one small part of this shagreen microsculpture preserved (Fig. 21).

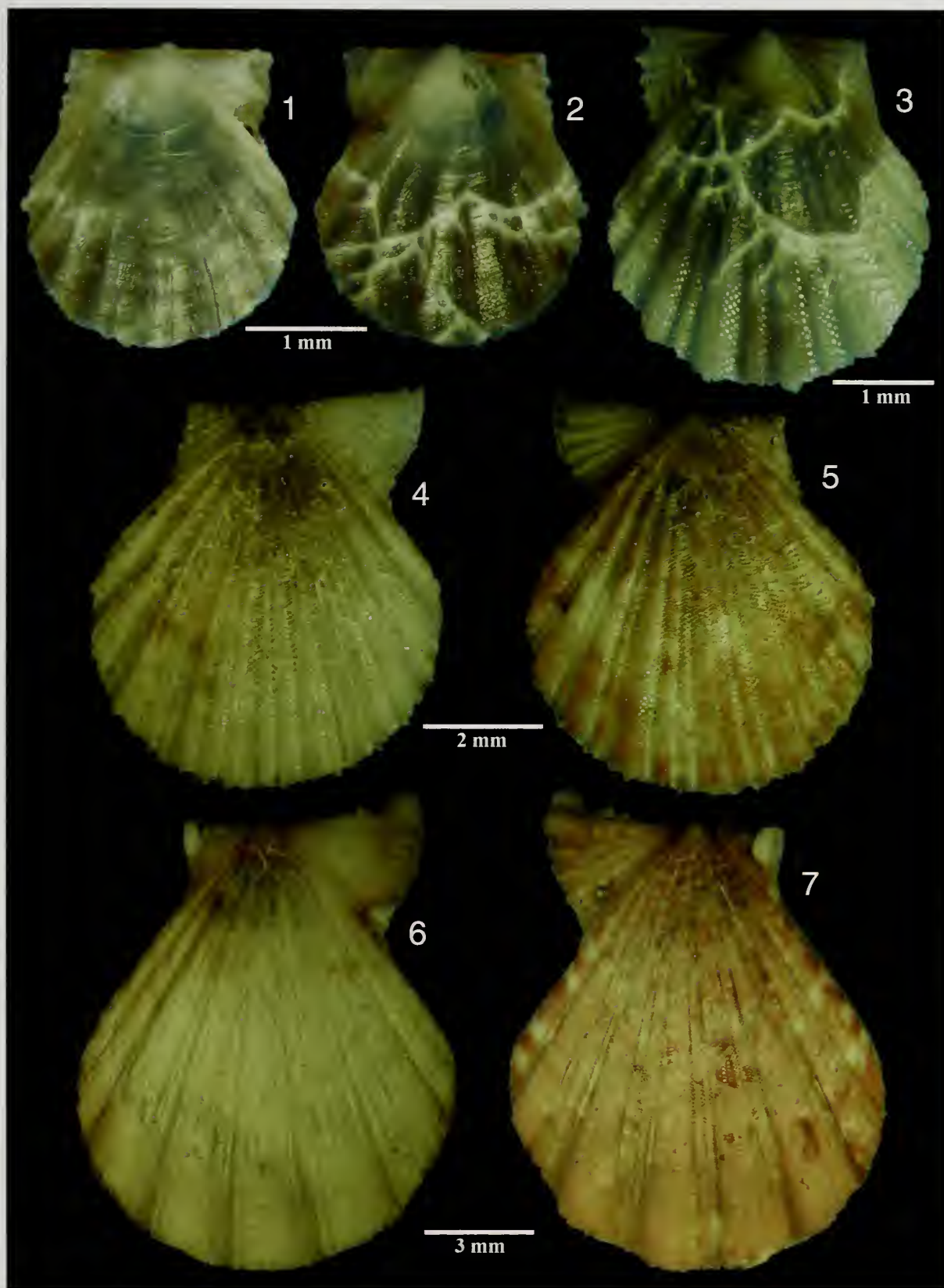
In between the secondary riblets a series of microscopic pits can be seen.

On the dorsal margin of auricles tubercles are absent.

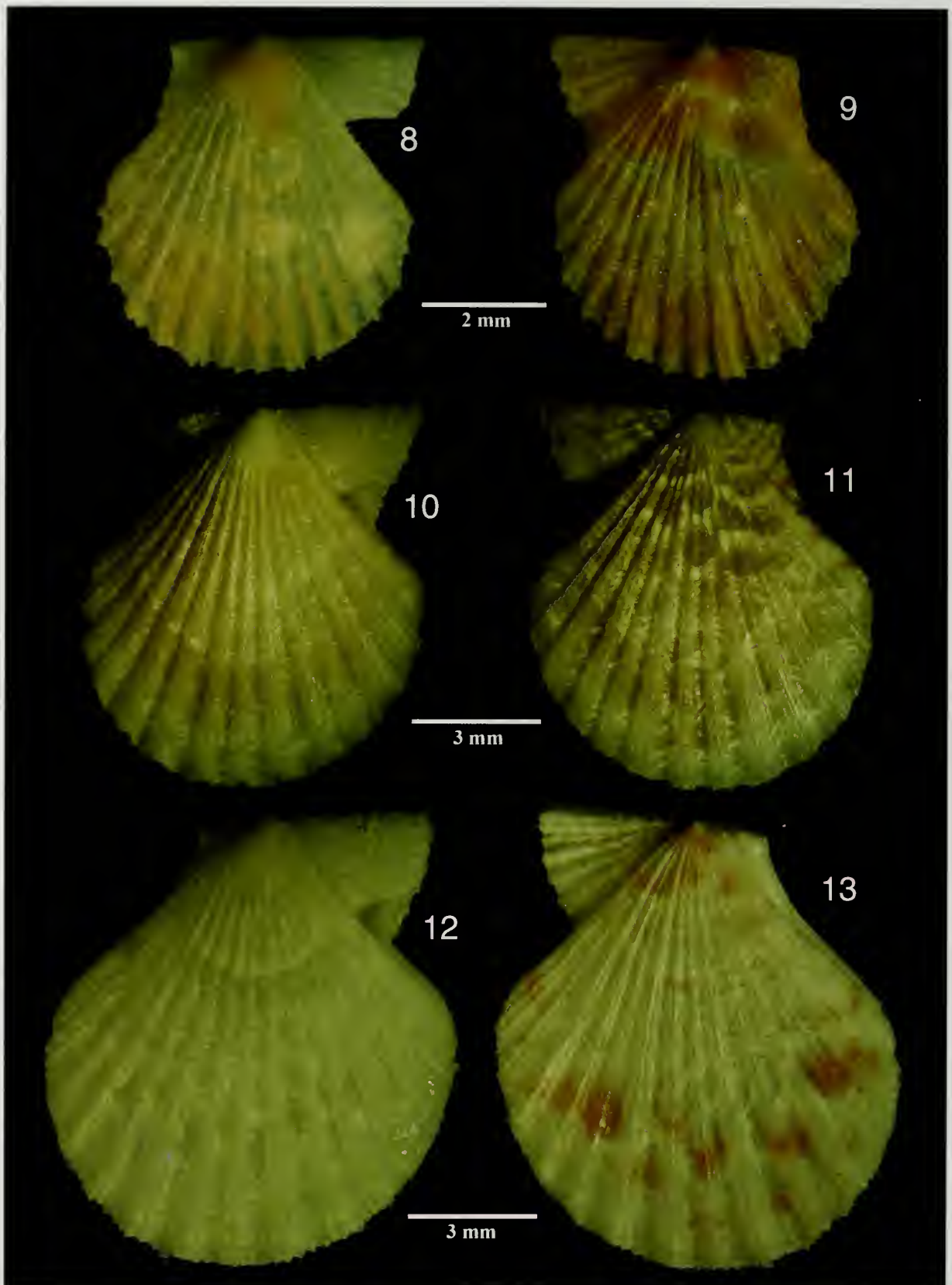
Discussion and conclusion. The main differences that distinguish *M. pesfelis* from *S. coruscans coruscans* are the large tubercles on the auricles and distinctly lower number of primary ribs (7 or 8 against 14 or 15). The adult specimens are also much bigger (65-85 mm against 15-22 mm).

The comparison of juvenile specimens of *M. pesfelis* and *S. coruscans coruscans* of about the same size, also show some differences.

The shagreen microsculpture is similar in both species but in *M. pesfelis* it is more prominent and the cells



Figures 1-7. *Manupecten pesfelis* (Linné, 1758) from Mljet Island (Croatia), 60-90 m. 1-2. H = 2.5 mm. 1. right valve, 2. left valve; 3. H = 3.6 mm, left valve; 4-5. H = 6.7 mm, 4. right valve, 5. left valve; 6-7. H = 13.0 mm, 6. right valve, 7. left valve.



Figures 8-13. *Semipallium coruscans coruscans* (Hinds, 1845) from Raiatea Island (French Polynesia). 8-9. H = 5.5 mm, 8. right valve, 9. left valve; 10-11. H = 9.0 mm, 10. right valve, 11. left valve; 12-13. H = 10.7 mm, 12. right valve, 13. left valve.

are deeper and larger than those in *S. coruscans coruscans*. It seems that, in the second species, this microsculpture is very delicate and consequently it is usually eroded while in juvenile specimens of *M. pesfelis* it is usually very well preserved.

In the Indo-Pacific species primary radial ribs are well formed and regularly arranged in all three specimens (Figs 8-13) while in *M. pesfelis* these ribs are irregularly arranged (Figs 3-5). Only in size of 13 mm *M. pesfelis* (Figs 6-7) show well-formed primary ribs but they are different in number and shape than those in *S. coruscans coruscans* of the similar size.

Also the sculpture of auricles is different and in *M. pesfelis* radial and concentric sculpture are more prominent (Figs 14-29). In the size of 13 mm *M. pesfelis* already has one strong tubercle on the edge of posterior auricles (5-6 in adult ones).

The series of microscopic pits which are visible in between secondary riblets of *S. coruscans coruscans* are not present in *M. pesfelis*.

Šiletić (2004) described *S. coruscans coruscans* (from Indo-Pacific region) as follows: "exterior shell surface main characteristic are: 12-15 primary tripartite radial ribs, from which 1-2 intercostals secondary radial riblets are formed, determining about 65 secondary riblets and a shagreen microsculpture between the costae". This description agrees very well with our specimens from Raiatea Island.

She described the single specimen from Croatia as follows: "Our specimen of *Semipallium coruscans coruscans* is 4.8 mm high and 5.2 mm long 14 radial ribs are present, with some secondary riblets in initial stage that however form a strongly developed shagreen microsculpture on the lower half of the shell, near the ventral side of the shell. The colour of the shell is yellowish-brown, with white tinges and blotches in the centre of the shell, and a brownish part near the umbo, at the beginning of the auricles". Our specimen of 3.6 mm (Fig. 3) agrees very well with this description.

After these observations it is obvious that the only specimen figured by Šiletić (2004) belongs to the same species as our specimens from Mljet Island so that the report of *Semipallium coruscans coruscans* from Adriatic Sea should be considered as a misidentification of *Manupecten pesfelis*.

Our conclusion is also supported by CLEMAM (2007) and CIESM (2007): they do not report this alien species in their lists.

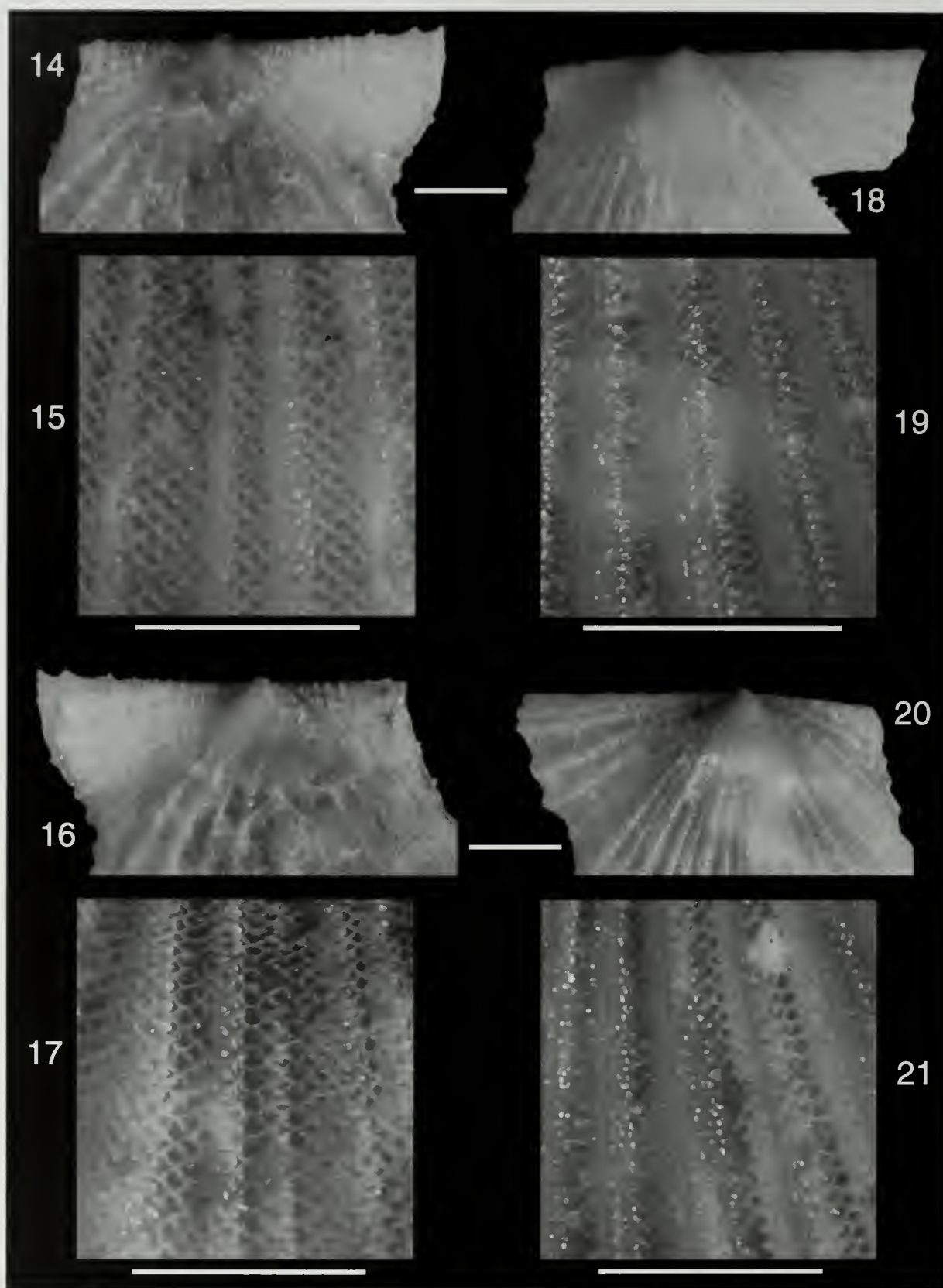
We notice now that *Semipallium coruscans coruscans* (Hinds, 1845) should be placed in the genus *Paschinnites* Dijkstra & Raines, 1999 as stated by Paulay (2003).

ACKNOWLEDGEMENTS

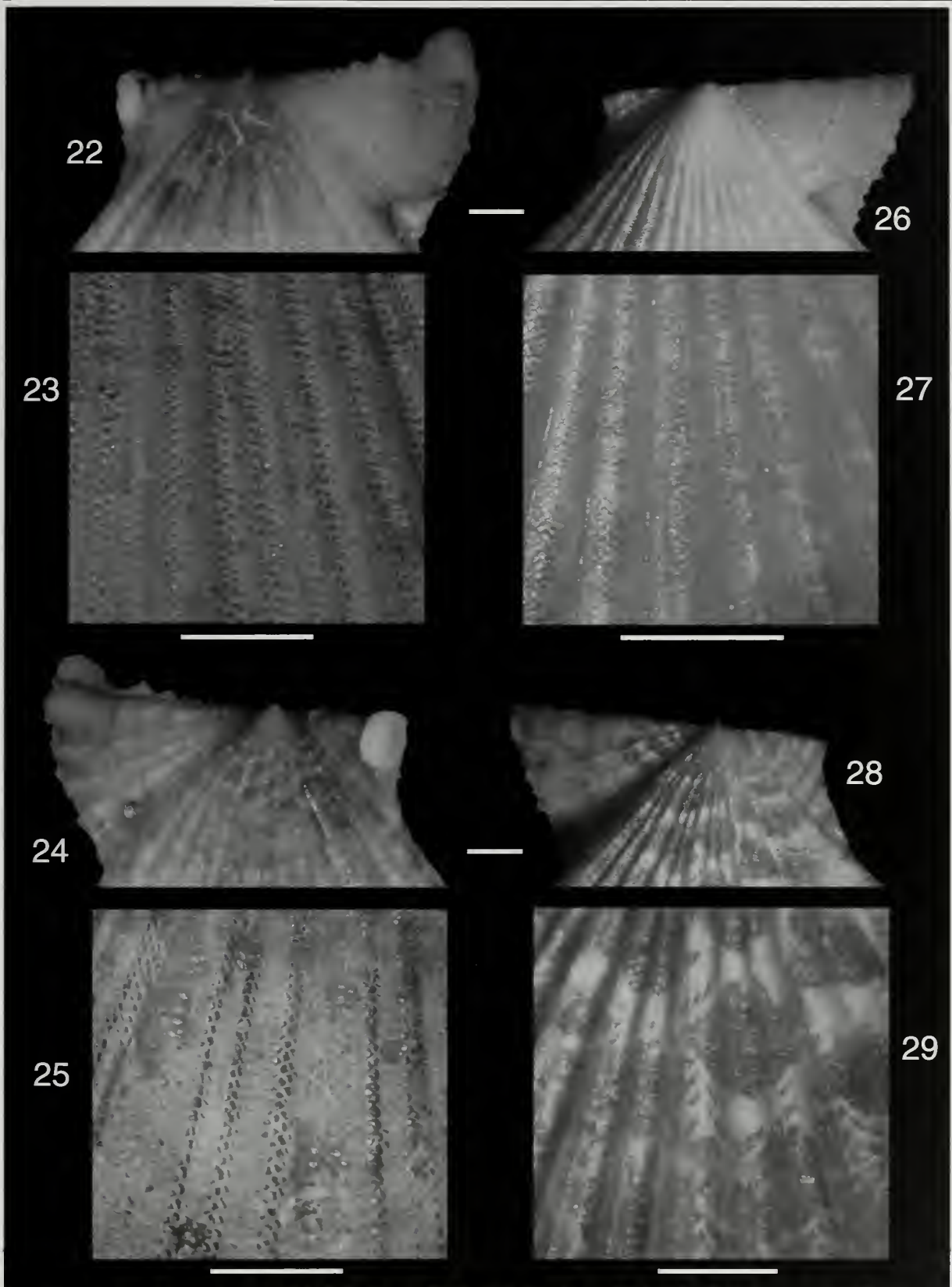
We wish to thank Dr. H.H. Dijkstra (University of Amsterdam, The Netherlands) for some information about bibliography.

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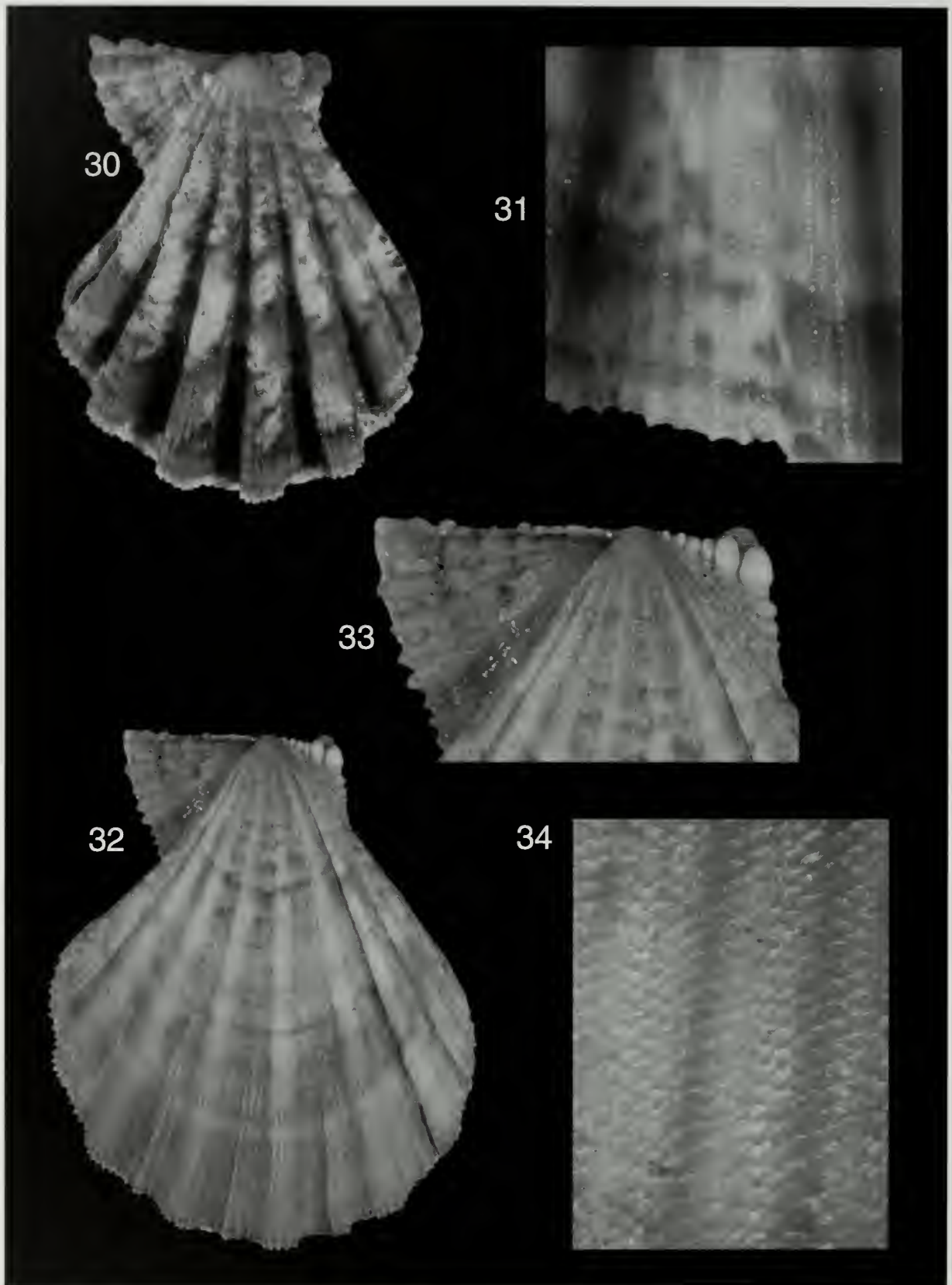
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Figures 14-17. *Mampecten pesfelis* (Linné, 1758) from Mljet Island (Croatia), 60-90 m, size 6.7 mm. 14. auricles of the right valve, 15. detail of the right valve, 16. auricles of the left valve, 17. detail of the left valve; 18-21. *Semipallium coruscans coruscans* (Hinds, 1845) from Raiatea Island (French Polynesia), size 5.5 mm. 18. auricles of the right valve, 19. detail of the right valve, 20. auricles of the left valve, 21. detail of the left valve. Scale bar = 1 mm.



Figures 22-25. *Manupecten pesfelis* (Linné, 1758) from Mljet Island (Croatia), 60-90 m, H = 13.0 mm. **22.** auricles of the right valve, **23.** detail of the right valve, **24.** auricles of the left valve, **25.** detail of the left valve; **26-29.** *Semipallium coruscans coruscans* (Hinds, 1845) from Raiatea Island (French Polynesia), H = 9.0 mm. **26.** auricles of the right valve, **27.** detail of the right valve, **28.** auricles of the left valve, **29.** detail of the left valve. Scale bar = 1 mm.



Figures 30-34. *Manupecten pesfelis* (Linné, 1758). 30. specimen from Secca delle Murelle (Viterbo, Italy), H = 22.0 mm, 31. detail of sculpture; 32. specimen from Altafiumara (Reggio Calabria, Italy), H = 60.0 mm, 33. detail of auricles, 34. detail of sculpture.